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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,782	01/13/2004	John U. Knickerbocker	FIS920030328	2955

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DELIO & PETERSON, LLC
121 WHITNEY AVENUE
NEW HAVEN, CT 06510

EXAMINER

BLEVINS, JERRY M

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,782

Applicant(s)

KNICKERBOCKER ET AL.

Examiner

Jerry Martin Blevins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-19 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: Brian Healy

DETAILED ACTION

Response to Arguments

Applicant's arguments, see pages 6-9, 11, and 12, filed 10/27/05, with respect to the rejection(s) of claim(s) 1-7 and 20 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of newly cited prior art reference, US Patent to Basavanhally et al., number 5,185,846.

Applicant's arguments, see pages 9-12, filed 10/27/05, with respect to claims 8-19 have been fully considered and are persuasive. The rejection of claims 8-19 has been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Basavanhally.

Regarding claim 1, Basavanhally teaches a ferrule for an optical fiber connector (Figure 3) comprising a multilayer (layers 14 and 15) ceramic or silicon wafer body (column 2, lines 34-52) having at least a top layer (14) and a bottom layer (15), front

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and rear and opposed sides (Figure 3, unnumbered), and a plurality of optical fiber through openings (17,18) extending through the body from the top layer to the bottom layer (Figure 3) for holding individual optical fibers (13).

Regarding claims 6 and 7, Basavanhally teaches that the through openings are made by etching (column 2, lines 34-52).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basavanhally in view of US Pre Grant Publication to Hengelmolen, number 2004/0161205.

Regarding claim 2, Basavanhally teaches the limitations of the base claim 1. Basavanhally does not teach alignment pin through openings extending through the body between the top and the bottom. Hengelmolen teaches alignment pin through openings (Figures 1 and 2, element 10a) extending through the body between the top and the bottom. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the alignment pin through openings of Hengelmolen in the ferrule of Basavanhally. The motivation would have been to improve alignment with respect to another ferrule (Hengelmolen, page 2, paragraph 25).

Regarding claim 3, Basavanhally teaches the limitations of the base claim 1. Basavanhally does not teach that the optical fiber through openings are tapered.

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Hengelmolen teaches tapered optical fiber through openings (Figure 2, taper section 10g and page 2, paragraph 29). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the tapered optical fiber through openings of Hengelmolen in the ferrule of Basavanhally. The motivation would have been to improve insertion efficiency (Hengelmolen, page 2, paragraph 22).

Regarding claim 4, Basavanhally teaches the limitations of the base claim 1. Basavanhally does not teach that the optical fiber through openings are tapered at the entrance end of the opening. Hengelmolen teaches optical fiber through openings tapered at the entrance of the opening (Figure 2, taper section 10g tapered at entrance end 10e and page 2, paragraph 29). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the optical fiber through openings tapered at the entrance of the opening of Hengelmolen in the ferrule of Basavanhally. The motivation would have been to improve insertion efficiency (Hengelmolen, page 2, paragraph 22).

Regarding claim 5, Basavanhally teaches the limitations of the base claim 1. Basavanhally does not teach that the optical fiber through openings are wider at the entrance end of the opening. Hengelmolen teaches optical fiber through openings, which are wider at the entrance end of the opening (Figure 2, taper section 10g and page 2, paragraph 29 which explicitly teaches that entrance end 10e is wider than guide section 10d). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the optical fiber through openings, which are wider at the entrance end of the opening, of Hengelmolen in the ferrule of Basavanhally. The

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motivation would have been to improve insertion efficiency (Hengelmolen, page 2, paragraph 22).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Basavanhally in view of US Patent to Sizer, II et al., number 5,345,529.

Regarding claim 20, Basavanhally teaches the limitations of the base claim 1. Basavanhally does not teach a molded support to hold a portion of optical fibers extending from the ferrule. Sizer teaches a ferrule (Figure 2D, element 230) comprising a support (Figure 2D, support plate 201) to hold a portion of optical fibers (Figure 2D, elements 210 and 220) extending from the ferrule (Figure 2D and column 2, lines 31-66). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the support of Sizer in the ferrule of Basavanhally. The motivation would have been to improve the precision of the mounting of the fibers (Sizer, abstract).

Allowable Subject Matter

Claims 8-19 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 8, US Pre Grant Publication to Dautartus et al., number 2003/0095759, teaches a method for making a ferrule (Figure 1A, element 120) for an optical fiber connector (page 3, paragraph 39) comprising the steps of: forming a plurality of greensheets from ceramic material (page 3, paragraph 39), stacking the

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plurality of greensheets together to a desired thickness having a top, bottom, front and rear sides and opposed sides (Figure 1A and page 3, paragraph 39), laminating the stack (page 3, paragraph 39), and sintering (firing) the laminating stack to form an optical connector ferrule (page 3, paragraph 39). Dautartus does not teach the step of forming optical fiber through openings in the stack extending through the top layer to the bottom layer in the desired pattern. Furthermore, Dautartus, either alone or in combination with the other prior art of record, does not disclose or render obvious the step of forming optical fiber through openings in the stack extending through the top layer to the bottom layer in the desired pattern.

Claims 9-15 are allowed based on dependence from allowed base claim 8.

Regarding claim 16, Dautartus teaches a method for making a ferrule (Figure 1A, element 120) for an optical fiber connector (page 3, paragraph 39) comprising the steps of: forming a plurality of ferrule layers from a ceramic material greensheet (page 3, paragraph 39), stacking the ferrule layers to a desired thickness having a top, bottom, front and rear sides and opposed sides (Figure 1A and page 3, paragraph 39), and securing the layers to hold the stack together (by laminating and firing, page 3, paragraph 39). Dautartus does not teach the step of forming optical fiber through openings in the stack extending through the top layer to the bottom layer in the desired pattern. Furthermore, Dautartus, either alone or in combination with the other prior art of record, does not disclose or render obvious the step of forming optical fiber through openings in the stack extending through the top layer to the bottom layer in the desired pattern.

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Claims 17-19 are allowed based on their dependence from allowed base claim 16.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Martin Blevins whose telephone number is 571-272-8581. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMB



Brian Healy
Primary Examiner